GCN CIRCULAR 23807: INTEGRAL observation of IceCube-190124A

Savchenko, V.; Ferrigno, C.; Bozzo, E.; Courvoisier, T.; Kuulkers, E.; Sanchez, C.; Mereghetti, S.; Rodi, J.; Bazzano, A.; Natalucci, L.

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FROM: Volodymyr Savchenko at ISDC,U of Geneve <savchenk@in2p3.fr>

V. Savchenko, C. Ferrigno, E. Bozzo, T. Courvoisier
(ISDC/UniGE, Switzerland)
E. Kuulkers (ESTEC/ESA, The Netherlands)
C. Sanchez (ESAC/ESA, Spain)
S. Mereghetti (INAF IASF-Milano, Italy)
J. Rodi, A. Bazzano, L. Natalucci, F. Panessa, P. Ubertini
(IAPS-Roma, Italy)
J. Chenevez, S. Brandt (DTU, Denmark)
R. Diehl, A. von Kienlin (MPE, Germany)
D. Gotz, Ph. Laurent, A. Goldwurm
(DRF/Irfu/DAp Saclay/CEA, France)
A. Coleiro (APC, France)
L. Hanlon, A. Martin-Carrillo (UCD, Ireland)
J.-P. Roques, E. Jourdain, P. von Ballmoos (IRAP, France)
A. Domingo, J. M. Mas-Hesse (CAB/CSIC-INTA, Spain)
A. Lutovinov, R. Sunyaev (IKI, Russia)

Using INTEGRAL we have performed a search for a prompt gamma-ray counterpart of the cosmic neutrino candidate IceCube-190124A (GCN 23785).

At the time of the event (2019-01-24 03:43:54 UT, hereafter T0), INTEGRAL was operating in nominal mode except for the SPI detector which was undergoing annealing procedure. The peak of the neutrino localization probability (GCN 23785) was at an angle of 90 deg with respect to the spacecraft pointing axis, but from a direction such that the IBIS instrument assembly is blocking the SPI-ACS detector. This particularly unfavorable orientation implies considerably suppressed responses of ISGRI, IBIS/Veto, and SPI-ACS.

The background within +/-300 seconds around the event was very stable.Â We do not detect any significant counterparts and estimate a 3-sigma upper limit on the 75-2000 keV fluence of 5.1e-07 erg/cm^2 for a burst lasting less than 1 s with a characteristic short GRB spectrum (an exponentially cut off power law with alpha=-0.5 and Ep=600 keV) occurring at any time in the interval within 300 s around T0.

For a typical long GRB spectrum (Band function with alpha=-1, beta=-2.5, and Ep=300 keV), the derived peak flux upper limit is ~7.2e-07 (2.1e-06) erg/cm^2/s at 1 s (8 s) time scale in 75-2000 keV energy range.